to recite, in part, that the industrial vehicle has "a parking brake located on an output shaft, wherein the parking brake is switched from a non-braking state to a braking state by the controller if the vehicle speed is lower than a predetermined value."

Referring to page 24 lines 1-12 of the specification, by way of example only, Applicants' claimed industrial vehicle includes a parking brake which is switched from a non-braking state to a braking state by the parking brake control procedure if the vehicle speed V is lower than the determination value VO, which is lower than the determination value V1, and if the CPU has been receiving the brake signal BRK over the predetermined time period.

Neither Iwata nor Matsuda discloses or teaches a parking brake which is switched from a non-braking state to a braking state by the control procedure if the vehicle speed is lower than a predetermined value. Because the cited references do not teach or suggest the claimed subject matter in amended claim 4, Applicants' claimed invention would not have been obvious over the references of record.

Reconsideration and withdrawal of the rejection of claim 4 under §103(a) is respectfully requested.

2. Claims 34, 38, 40 and 48 were rejected under 35 U.S.C. 103(a) as being unpatentable over Shimanaka et al. in view of Tsuno. Specifically, the Examiner asserts that while Shimanaka et al. fails to teach the use of a rate of change of wheel velocity in the determination of skidding occurrences, Tsuno teaches a controller for anti-lock and slip control, wherein wheel speeds for all vehicle wheels are determined and, before processing, wheel speed rate of change is also determined. See Office Action at pages 3-4.

Applicants, however, assert that neither Shimanaka et al. nor Tsuno teaches or discloses either alone or in combination, a controller which compares the computed rotational acceleration to a predetermined acceleration determination value to judge whether the driving wheel is skidding, as recited in claims 34, 38 and 48.

Tsuno discloses calculating the wheel acceleration of each wheel based on the wheel speed. High frequency components of the wheel acceleration are then filtered using a high-pass filter to obtain the frequency components of the wheel acceleration. Thereafter, a variance of the filtered wheel acceleration is calculated and a bad road condition determination is executed using the calculated variance.

The claimed invention, on the on the other hand, does not use a calculated variance as taught by Tsuno et al. to judge the road condition. Instead, the controller of the claimed invention compares the computed rotational acceleration to a predetermined acceleration determination value to judge whether the driving wheel is skidding.

Neither Shimanaka nor Tsuno et al., discloses individually or in combination a controller which compares a computed rotational acceleration to a predetermined acceleration determination value. Because the cited references do not teach or suggest the subject matter recited in claims 34, 38 and 48, Applicants' claimed invention would not have been obvious over the references of record.

Claim 40 depends from claim 38. Therefore, claim 40 includes all of the limitations of claim 38. Accordingly, as presented in the arguments above, because claim 38 is patentable over the cited art, claim 40 is also patentable for at least similar reasons, based on its dependency and the limitations within the claim.

Reconsideration and withdrawal of the rejection of claims 34, 38, 40 and 48 under §103(a) is respectfully requested.

CONCLUSION

Based on the foregoing remarks, it is respectfully submitted that the claims as currently pending are patentable and in condition for allowance. Reconsideration of the application and withdrawal of the rejections are respectfully requested.

The Commissioner is hereby authorized to charge any additional fees which may be required for the timely consideration of this amendment under 37 C.F.R. §§ 1.16 and 1.17, or credit any overpayment to Deposit Account No. 13-4500, Order No. 5000-4810.

Respectfully submitted,
MORGAN & FINNEGAN, L.L.P.

Dated: February 20, 2003

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ATTACHMENT WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION

Please AMEND the paragraph beginning at line 1 of page 24 as follows:

Although not shown in the timing charts of Figs. 5(a) to 5(d), the parking brake 25 is switched from a non-braking state to a braking state by the parking brake control procedure if the vehicle speed V is lower than the determination value VO, which is lower than the determination value V1, and if the CPU 56 has been receiving the brake signal BRK over the predetermined period TO. Thus, if the brake pedal 33 is released when the vehicle is stopped, the vehicle remains braked by the parking brake 25. When the acceleration pedal 31 is depressed, the parking brake 25 is switched from braking state to non-braking state by the parking brake control procedure.

Please AMEND the paragraph beginning at line 34 of page 87 as follows:

A skidding prevention control according to the tenth embodiment will now be described with reference to the flowchart of Fig. [13] 31. The routine of Fig. 31 is executed at predetermined intervals (for example, ten to fifty milliseconds) while the engine is running. When necessary, the left front wheel 14 will be referred to as a left driving wheel 14L, and the right front wheel 14 will be referred to as a right driving wheel 14R.

IN THE CLAIMS

Please AMEND claim 4 to read as follows:

4. (Twice Amended) An industrial vehicle comprising:

an engine;

a torque converter;

a transmission coupled to the engine by the torque converter;

a driving wheel, wherein the driving wheel is rotated by power that is transmitted from the transmission;

a hydraulic brake for braking the driving wheel, wherein the hydraulic brake generates a braking force, the magnitude of which corresponds to a hydraulic pressure applied to the hydraulic brake;

a brake valve for adjusting the hydraulic pressure applied to the hydraulic brake;

a brake actuator, which is moved by a human operator to actuate the hydraulic brake;

a parking brake located on an output shaft;

a sensor for detecting the rotational speed of the driving wheel; and

a controller, wherein the controller controls the brake valve such that the hydraulic brake brakes the driving wheel with a force of a normal value, which corresponds to a force applied to the brake actuator, wherein the controller computes the rotational deceleration of the driving wheel while braking based on the detected rotational speed, and wherein, when the computed rotational deceleration exceeds a predetermined deceleration determination value, the controller controls the brake valve such that the braking force of the hydraulic brake is set to a limit value, which is smaller than the normal value,

wherein, when the vehicle speed is lower than a predetermined determination value, the controller maintains the braking force of the hydraulic brake at the normal value regardless of the rotational deceleration, and

wherein the parking brake is switched from a non-braking state to a braking state by the controller if the vehicle speed is lower than a predetermined value.